NAVAL INTELLIGENCE PROCESSING SERVICES (NIPS)

SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

for the

GLOBAL COMMAND AND CONTROL SYSTEM (GCCS)

Version 3.0.1

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Prepared by
Naval Command, Control, and Ocean Surveillance Center
RDT&E Division Detachment
Philadelphia, PA

Prepared for
Defense Information Systems Agency
Arlington, VA

1. Scope

1.1   *Identification*

This Software Requirements Specification (SRS) establishes the requirements for the Global Command and Control System's (GCCS) Naval Intelligence Processing Services (NIPS) 3.0.1.

This SRS covers the following NIPS 3.0.1 segments:

SYBASE

ICE

SINBAD

NID

STRIKE

NDEV

AMHS

PROF

NIPSSA

DBAPPS

NIPS

1.2   *System Overview*

GCCS supports the command, control, communications, computers, and intelligence (C^4I) for the Warrior concept. GCCS is a comprehensive, worldwide network of systems which will provide the National Command Authority, Joint Staff, combatant commands, Services, Defense agencies, Joint Task Forces and their components, and others with information processing and dissemination capabilities necessary to conduct command and control of forces.

NIPS provides GCCS with a comprehensive military intelligence data base and message applications which support strike warfare, amphibious warfare, air operations, mission planning, threat analysis, and Command and Control (C^2). The Integrated Data Base (IDB) provided in NIPS consists of national intelligence data

(referred to as national data) and tactically collected, processed, and analyzed intelligence data (referred to as tactical data). NIPS aligns C^4I system developments with Joint and Allied community interoperability requirements.

NIPS 3.0.1 functions provide tools to query and modify intelligence databases, process and store incoming message traffic, generate and transmit messages, and create briefings with mapping and imagery tools.

NIPS 3.0.1 operates in a client-server, multi-tasking environment. The primary/minimum components of a typical system configuration consist of a communications processor, data base server and workstations.

1.3   *Document Overview*

This document defines the engineering requirements and capabilities of the NIPS 3.0.1 system software.

Based upon Department of Defense (DoD) Military Standard 498 (DD Form 1664) and Joint Maritime Command Information System (JMCIS) Documentation Standard 1.0, this document is divided into 5 sections.

Section 2, Referenced Documents, identifies all documents used as references during the preparation of this SRS as well as all documents referenced in this SRS.

Section 3, Requirements, contains the software requirements of the NIPS 3.0.1 system. The software requirements are allocated into functional areas and include the identification, capabilities, interfaces, design constraints and human performance requirements of each application. There are 18 functional areas detailed in this SRS.

Section 4, Qualification Provisions, describes the qualification methods used to ensure that the requirements have been met for the NIPS 3.0.1 software.

Section 5, Requirements Tracability, lists the source(s) of the NIPS 3.0.1 requirements.

2.

Referenced Documents

This section identifies all government and non-government specifications, standards, and other documents used as references during the preparation of this SRS or were referenced within this SRS. In the event of conflict between the documents referenced and this specification, the contents of this specification shall be considered the superseding requirements.

2.1 *Government Documents*

2.1.1 Standards

Architectural Design Document for the Global Command and Control System (GCCS) Common Operating Environment (COE), Draft.

Defense Information Infrastructure (DII) Common Operating Environment (COE) Integration and Runtime Specification (I&RTS) Version 2.0, 23 October 1995.

DoD 5220.22-M, *National Industrial Program Security Operating Manual*, January 1995.

DoD-HDBK-292, *Military Handbook, Training Materials Development*, 31 October 1986.

GCCS Training Plan, 02 June 1995.

MIL-STD-498, *Software Development and Documentation*, 05 December 1994.

NAVEDTRA 130, *Task Based Curriculum Development Manual*, February 1993.

SPAWARSYSCOM JMCIS-DS-1.0*, Joint Maritime Command Information System (JMCIS) Documentation Guide* , January 1995.

User Interface Specifications for the Defense Information Infrastructure (DII), Version 2.0, 01 April 1996.

2.1.2 Other Publications

JMCIS/NTCSA-SA-001, *JMCIS System Administrator's Guide*, January 1996, PRC R-5451

JMCIS/NTCSA-UG-002, *NIPS System Operators Manual,* September 1995, PRC R-5412

JMCIS-SD-001A, *Joint Maritime Command Information System (JMCIS) Segment Description,* August 1996.

NIPS 2.2 Applications, January 1996, PRC R-5446.

3. **Requirements**

3.1   *Required States and Modes*

NIPS 3.0.1 will not be required to operate in any distinct states or modes.

3.2   *Capability Requirements*

3.2.1   **Central Data Repository**

The NIPS 3.0.1 shall provide a central repository for relational data bases. This repository, known as the Central Data Base Server (CDBS), will support the NIPS 3.0.1 client-server architecture and allow clients to access military intelligence data via NIPS 3.0.1 applications.

3.2.2   **Data Retrieval**

NIPS 3.0.1 shall provide access to the data contained within the Central Data Base Server (CDBS).

3.2.2.1   **Text Query**

A query function will provide access to the IDB, NID, and REFDB from within a single window. Queries will be created using Views, AOIs, predefined reports, geographic criteria, and/or allegiance.

3.2.2.2   **Use Saved Query**

A function will provide the ability to save and re-use commonly created queries.

3.2.2.3   **CDBS Web Browser**

An HTML based browser will provide access to the data bases contained within the CDBS.

3.2.2.4 **Graphical Track Analysis**

A "point-and-click" graphical user interface will provide the ability to query and plot tracks from the IDB. For additional information on Graphical Track Analysis, refer to Section 3.2.6.

3.2.3 **Data Output**

NIPS 3.0.1 shall provide output options for the data retrieved from the Central Data Base Server (CDBS). The results of the query will be available in report formats varying in the degree of detail provided.

3.2.3.1 **Report Formats**

Several types of reports will be available to view data retrieved from the CDBS.

3.2.3.1.1 *Summary Report*

Summary reports will provide a list of records matching a query of the IDB. A general level of detail will be provided for each record.

3.2.3.1.2 *Overview Report*

Overview Reports will provide a summary of a record from the IDB or NID. The operator will have the ability to select the categories of information displayed. Each occurrence for a particular category of information will also be provided.

3.2.3.1.3 *Single Occurrence Report*

Single Occurrence Reports will provide all available data on a selected occurrence found within an Overview Report.

3.2.3.1.4 *Specific Report*

Specific Reports will provide information on a record from the IDB or NID. The operator will have the ability to select the categories of information displayed.

3.2.3.1.5 *Text Report*

Text Reports will provide a summary of a record from the IDB or NID. The operator will have the ability to select the categories of information displayed. Only the most recent occurrence will be displayed.

3.2.3.2   **Report Output**

Information contained on a report will be made available for output/manipulation from within that particular report window.

3.2.3.2.1   *Display Records*

Records retrieved will be available for display on the workstation monitor.

3.2.3.2.2   *Print Records*

A printing capability, from the workstation to a printer connected to the GCCS network, will be provided.

3.2.3.2.3   *File Records*

Records retrieved will be transferable to a file for future processing.

3.2.3.2.4   *Format Report*

Individual system operators will have the ability to custom format reports to determine the categories of information displayed on the report.

3.2.3.2.5   *Plot Data*

Record data contained on a report will be plottable on a geographic chart.

3.2.3.2.6   *Generate a Message*

An Order of Battle Report (OOB) message will be able to be generated containing the information from a report.

3.2.3.2.7   *Display Related Images*

Imagery and corresponding data associated to a record will be displayable.

3.2.3.2.8   *Delete Records*

Analyst will be able to delete tactical records from the data base.

3.2.3.2.9   *Merge Tactical Data*

Analyst will be able to merge tactical records within the data base.

3.2.4   Data Base Maintenance

NIPS 3.0.1 shall provide applications to monitor and maintain the data contained within the Central Data Base Server (CDBS).

3.2.4.1   Monitor Data Base

A display will provide information on the operational status and size of the individual data base components of the CDBS.

3.2.4.2   Add Record

A function will be provided to manually add a tactical record to the IDB.

3.2.4.3   Add Occurrence

A function will be provided to manually add an occurrence to a record in the IDB.

3.2.4.4   Modify Occurrence

A function will be provided to manually modify an occurrence within a record in the IDB.

3.2.4.5   Delete Record

A function will be provided to manually delete a tactical record from the IDB.

3.2.4.6   Delete Occurrence

A function will be provided to manually delete an occurrence within a record from the IDB.

3.2.4.7   Modify NID

A function will be provided to modify characteristics and performance data contained within the Naval Intelligence Database (NID).

3.2.4.8   Analyst Review

A function will be provided to allow analysts to mark an updated record as reviewed.

3.2.4.9   **Tactical Data Merge**

A function will be provided to merge tactical records within the data base.

3.2.4.10   **IDBTF Processing**

A capability will be provided to allow the reception and processing of Transaction Formatted data files to update the IDB.

3.2.5   **Communications Management**

NIPS 3.0.1 shall provide applications to receive, sort, process, store, retrieve, and manage messages within the CDBS.

3.2.5.1   **Communications Processing**

The capability will be provided to process incoming communications from virtually any communications source.

3.2.5.1.1   *Guard List*

A filter will be provided to determine which messages will be allowed into the system for further processing.   This filter will be modifiable by the system administrator.

3.2.5.1.2   *Dirty Word Processing*

A filter will be provided to prevent messages containing "key" words from being routed to analysts' accounts.   This filter will be modifiable by the system administrator.

3.2.5.1.3   *Sectional Message Processing*

A capability will be provided to process messages that are generated and received as separate sections of a single message. System administrators will be able to set parameters that specify how the messages will be processed. The ability to monitor the processing status of these messages will also be provided.

3.2.5.1.4   *Message Parsing*

A process will be provided to automatically parse and apply information derived from certain messages to existing NIPS 3.0.1 data base records. If no correlation between the incoming information and existing records are found, a new tactical record will be created.

3.2.5.2   Message Catalogue

A database will be provided to store all incoming messages.

3.2.5.2.1   *Message Catalogue Retrieval*

An application will be provided to retrieve messages from the message catalogue.

3.2.5.3   Message Profiling

An application will be provided which will automatically capture incoming messages that meet user-specified criteria and store them in individual profile accounts.

3.2.5.4   Message Output

Messages will be made available for output/manipulation, depending upon the analysts' access privileges.

3.2.5.4.1   *Display Messages*

Messages retrieved from the message catalogue will be available for display on the workstation monitor.

3.2.5.4.2   *Print Messages*

A printing capability, from the workstation to a printer connected to the GCCS network, will be provided.

3.2.5.4.3   *File Message*

Messages retrieved will be transferable to a file for future processing.

3.2.5.4.4   *Reroute Message*

Messages will be reroutable through the entire message processing system.

3.2.5.4.5   *Reprofile Message*

Messages will be reroutable through the message profiling system only, without the need to go through the entire message processing system.

3.2.5.4.6 *Notify Other Accounts*

Analysts will be able to forward profiled messages to other accounts, located on NIPS 3.0.1 workstations or PCs.

3.2.5.4.7 *Edit Messages*

Analysts with account privilege will be able to edit information within a message.

3.2.5.4.8 *Delete Messages*

Analysts with account privilege will be able to messages from the message catalogue.

3.2.6 Graphical Track Analysis

NIPS 3.0.1 shall provide a graphical user interface for retrieving and plotting records from the CDBS. Query parameters will include predefined data categories represented by symbols, a geographical selection area, and country of allegiance.

3.2.6.1 Display Customization

A capability will be provided to customize the display of tracks to include the alteration of track display colors, sizes, and annotations.

3.2.6.2 Stored Pictures

A capability will be provided to save a picture of tracks plotted on a geographical display and make this picture available for downloading onto another system. In addition to the geographical display, general data for the tracks plotted will also be available. The picture may be downloaded via communications channels or from a floppy disk, DAT, or exabyte tape.

3.2.6.3 Accessing Reports

A capability will be provided to quickly retrieve reports for tracks plotted on the display.

3.2.6.4 Associated Imagery

A capability will be provided to easily identify tracks plotted on the display which have associated imagery available and to retrieve this imagery.

3.2.7   Online Support

NIPS 3.0.1 shall provide online support for system operators and administrators in the form of context specific help windows and hypertext operator and administrator documentation.

3.2.7.1   Online Documentation

An online, hypertext markup language (HTML) version of the System Operator's Manual (SOM) and System Administrator's Guide (SAG) will be accessible from the system's main menus.

3.2.7.2   Online Help

Window specific functional help will be available within every system window.

3.2.8   Installation

NIPS 3.0.1 shall provide the capability to customize the load configuration of a system. Components of NIPS 3.0.1 will be provided in segments, allowing the user to choose which capabilities are installed. Additionally, the user will have the capability to determine which countries are loaded into the database.

3.2.9   Disaster Recovery/Troubleshooting

NIPS 3.0.1 shall provide the capability to troubleshoot and recover from system failures.

3.2.9.1   Disk 6 Replacement

The ability to replace the boot disk (disk 6) will be provided so that the system will not need to be reloaded from the operating system up.

3.2.9.2   Backup/Restore

The ability to backup and restore CDBS data bases will be provided.

3.2.9.3   Remote Login

The ability to remotely login to a system for troubleshooting will be provided.

3.3   *External Interface Requirements*

3.3.1   Interface Identification

NIPS shall provide interfaces for the following external systems: Tactical Automated Mission Planning System (TAMPS), Airborne Early Warning/Grid and Information System (AEGIS), Contingency Theater Air Control System (CTAPS), Joint Service Imagery Processing System   (JSIPS-N), Tactical Intelligence (TACINTEL), Naval Modular Automated Communications System (NAVMACS), and Message Distribution System (MDS).

3.3.1.1   Tactical Automated Mission Planning System (TAMPS)

An interface between NIPS 3.0.1 and TAMPS will provide a source through which TAMPS may access the NIPS 3.0.1 IDB in order to pull data to update its own data base.

3.3.1.2   Airborne Early Warning/Grid and Information System (AEGIS)

An interface between NIPS 3.0.1 and AEGIS will provide a source through which AEGIS may access the NIPS 3.0.1 CDBS in order to pull data.

3.3.1.3   Contingency Theater Air Control System (CTAPS)

An interface between NIPS 3.0.1 and CTAPS will provide a source through which CTAPS may incorporate Rapid Acquisition of Air Power (RAAP) data base elements into GCCS. This will allow CTAPS to access intelligence data from the NIPS 3.0.1 CDBS.

3.3.1.4   Joint Service Imagery Processing System (JSIPS-N)

An interface between NIPS 3.0.1 and JSIPS-N will provide a source through which JSIPS-N may pull from the tactical and message data bases of the NIPS 3.0.1 CDBS.

3.3.1.5   Tactical Intelligence (TACINTEL)

An interface between NIPS 3.0.1 and TACINTEL will provide a source through which TACINTEL may pass messages to the Message Handling Service (MHS) for processing into the Message Data Base (MSGDB) and IDB on the NIPS 3.0.1 CDBS.

3.3.1.6   **Naval Modular Automated Communications System (NAVMACS)**

An interface between NIPS 3.0.1 and NAVMACS will provide a source through which NAVMACS may act as an interface for messages coming into and going out from NIPS 3.0.1.

3.3.1.7   **Message Distribution System (MDS)**

An interface between NIPS 3.0.1 and MDS will provide a source through which MDS may act as an interface for messages coming into and going out from NIPS 3.0.1.

3.4 *Internal Interface Requirements*

3.4.1   **Interface Identification**

NIPS shall provide interfaces for the following internal systems: Tactical Information Management System (TIMS), Mine Warfare Environmental Decision Aids Library (METAL), Unified Build (UB), Cryptologic Unified Build (CUB), and Command and Control Warfare Center (C2WC).

3.4.1.1   **Tactical Information Management System (TIMS)**

An interface between NIPS 3.0.1 and TIMS will provide a source through which TIMS may access the NIPS 3.0.1 CDBS's MSGDB and NID. This interface will also allow TIMS to run a PC message profiling application against the CDBS.

3.4.1.2   **Mine Warfare Environmental Decision Aids Library (METAL)**

An interface between NIPS 3.0.1 and METAL will provide a source through which METAL may add certain data tables to the NIPS 3.0.1 IDB in order to pull data from the IDB.

3.4.1.3   **Unified Build (UB)**

An interface between NIPS 3.0.1 and UB will provide a source through which NIPS 3.0.1 may access UB elements in order to run in a General Services (GENSER) JMCIS environment. UB elements which NIPS 3.0.1 interfaces with include Chart, TacPlot, and Universal Communications Processor (UCP), among others.

3.4.1.4   **Cryptologic Unified Build (CUB)**

An interface between NIPS 3.0.1 and UB will provide a source through which NIPS 3.0.1 may access CUB elements in order to run in a Sensitive Compartmented Information (SCI) GCCS environment. UB elements which NIPS 3.0.1 interfaces with include Chart, TacPlot, and Universal Communications Processor (UCP), among others.

3.4.1.5   **Command and Control Warfare Center (C2WC)**

An interface between NIPS 3.0.1 and C2WC will provide a source through which C2WC may initialize and baseload its own data base from the NID and Naval Emitter Reference File (NERF), located on the NIPS 3.0.1 CDBS.

3.5   *Internal Data Requirements*

3.5.1   **Integrated Data Base (IDB)**

The NIPS 3.0.1 CDBS shall include the Integrated Data Base (IDB). This data base will provide detailed information that identifies and describes the relationship between different categories of General Military Information (GMI). IDB data shall focus on individual elements of these categories and the relationships between them. Data residing in the IDB will be baseloaded information (loaded from tape) which will be compiled by the Atlantic Intelligence Command (AIC) and the Joint Intelligence Center, Pacific (JICPAC) and distributed by the Defense Intelligence Agency (DIA). This data shall be referred to as "national" data. In addition, NIPS 3.0.1 will update IDB records with information derived from incoming communications and system analysts. This intelligence data shall be known as "tactical" data. Tactical location, equipment, unit association, and installation/facility information will be correlated with existing data base records. If no matches are found between existing data and incoming tactical data, NIPS 3.0.1 will create new records, which will be referred to as Land Tracks.

3.5.1.1   **Tactical Data Base**

The Tactical Data Base will contain up-to-date Installation/Facility data and Unit location, equipment, and association data provided by local analysts, remote analysts, message traffic, raw ELINT, and data correlation.

3.5.2   **Naval Intelligence Database (NID)**

The Naval Intelligence Database (NID) will contain detailed characteristics and performance (C&P) data for Platforms, Weapons, and Electronics. This information

will represent parameters common across specific classes of platforms, weapons, and electronics.

3.5.3   Air Tasking Order Data Base (ATODB)

The Air Tasking Order Data Base (ATODB) will provide access to Air Tasking Order (ATO) messages processed to the CDBS via the Tactical Information Management Services (TIMS) applications.

3.5.4   Collection Requirements Management Data Base (CRMDB)

The Collection Requirements Management Data Base (CRMDB) will provide collection requirements data at a Sensitive Compartmented Information (SCI) level. This data will allow analysts to manage information and assets necessary to satisfy cryptologic requirements.

3.5.5   Reference Data Base (REFDB)

The Reference Data Base (REFDB) will provide field definitions and decodes (also known as lookups) for the data bases located within the CDBS. This information shall be accessible when an analyst requests information about an entry field. This information shall not be modifiable by analysts.

3.5.6   Imagery Management Data Base (IMDB)

The Imagery Management Data Base (IMDB) will provide alpha-numeric data associated with intelligence imagery stored by the Imagery Exploitation Work Station (IEWS) processor. This data base shall also associate imagery with IDB and NID data and shall support Joint Service Imagery Processing System - Navy (JSIPS-N) tasking.

3.5.7   Electronic Intelligence (ELINT) Parameters Listing (EPL)

The Electronic Intelligence (ELINT) Parameters Listing (EPL) will provide detailed parametric data on radars.

3.5.8   Naval Emitter Reference File (NERF)

The Naval Emitter Reference File (NERF) will provide detailed electronics data.

3.5.9   Message Data Base (MSGDB)

The Message Data Base will contain all messages received and processed by NIPS 3.0.1.

3.6   *Security and Privacy Requirements*

NIPS 3.0.1 shall meet the security requirements necessary to operate in unclassified, General Services (GENSER), and Specially Compartmented Information (SCI) environments.

NIPS 3.0.1 shall operate with the user account security applications provided within the Unified Build (UB). Safeguards will be provided to ensure only authorized users have the ability to edit, modify, delete and transmit data from NIPS 3.0.1.

3.7   *Environment Requirements*

NIPS 3.0.1 shall run on both Hewlett Packard (HP) and Solaris/Sun operating systems and hardware.

3.8   *Computer Resource Requirements*

3.8.1   Computer Hardware Requirements

NIPS 3.0.1 shall operate on HP and Sun hardware components. HP computers on which NIPS 3.0.1 shall run include third and fourth generation Tactical Advanced Computers (TAC-3s and TAC-4s). These include the HP 750, 755, 712 and 770 computers.

Sun hardware components on which NIPS 3.0.1 shall run include the Sparc 20 computer.

3.8.2   Computer Software Requirements

NIPS 3.0.1 shall operate on HP and Solaris operating systems. HP operating systems on which NIPS 3.0.1 shall run include version 9.07.

Solaris operating systems on which NIPS 3.0.1 shall run include versions 2.3 and 2.4.

NIPS 3.0.1 shall also utilize Sybase version 4.9.2 as its database management system.

NIPS 3.0.1 shall be capable of utilizing word processing software including Word Perfect and Applix. It shall also be compatible with Netscape and Mosaic Hyper Text Markup Language (HTML) browsers.

3.8.3   Computer Communications Requirements

NIPS 3.0.1 shall receive and transmit communications through various secure channels.   Receive only sources will include Link 11, ... Networks for receiving and transmitting will include SIPRNET, NAVMACS, TADIX, OTCIXS,

3.9   *Software Quality Factors*

NIPS 3.0.1 shall pass stress tests established by DISA. It shall support 1000 tracks and 4 charts simultaneously.

The ability to quickly and successfully trouble shoot NIPS 3.0.1 shall be provided. NIPS 3.0.1 shall have a backup and restore capability for NIPS 3.0.1 data bases.

NIPS 3.0.1 shall accept remote logins via secure communications for troubleshooting.

NIPS 3.0.1 will meet the qualification requirements in accordance with all testing and evaluation standards. Refer to Section 4, Qualification Provisions, for additional information.

3.10   *Design and Implementation Constraints*

NIPS 3.0.1 shall be designed and implemented in compliance with Defense Information Infrastructure Common Operating Environment (DII COE) standards.

NIPS 3.0.1 shall be able to integrate and operate with the UB and other JMCIS segments in both an HP and Sun/Solaris environment.

3.11   *Personnel-Related Requirements*

It shall provide online support in the form of hypertext documentation and context sensitive help for each window.

NIPS 3.0.1 shall incorporate security features to allow only authorized users to perform editing and transmitting functions.

Verification messages will be displayed when deleting information from the CDBS to deter operators from accidently deleting data.

Audio and visual alerts will be provided to inform operators of significant changes in the system.

3.12   *Training-Related Requirements*

NIPS 3.0.1 will be supported by strucutred course curriculum for use in a schoolhouse environment in addition to on-site training as requested.

3.13   *Logistics-Related Requirements*

NIPS 3.0.1 shall operate on existing GCCS hardware. Technical support will be provided for any delivery, installation, training, and troulbeshooting which may be required. Additional support will be provided for exercises when requested.

3.14   *Documentation Requirements*

Functional Description Documents (FDDs) will be created and updated for each development effort within NIPS 3.0.1. FDDs will undergo an internal review by system developers and support personnel. Upon completion, the FDD will be delivered to the client for approval.

System Operator's Manuals (SOMs) and System Administrator's Guides (SAGs) will be created for use with NIPS 3.0.1. As the system is enhanced, documentation will be modified appropriately and delivered to the applicable authority for distribution.

A SOM will provide the user with all the background and procedural information necessary to fully operate NIPS 3.0.1.

A SAG will provide the system administrator with all pertinent background, procedural, and support information necessary to successfully administer NIPS 3.0.1. The SAG will include, but will not be limited to, installation, maintenance and troubleshooting information.

A NIPS Segment Description Document will be created and maintained to provide information to system operators and developers on the individual components of NIPS 3.0.1.

A Client Data Base Document (DBD) will be created and maintained to provide detailed information to system operators and developers on the structure and content of the CDBS.

3.15 *Packaging Requirements*

All packaging of NIPS 3.0.1 materials shall comply with all applicable JMCIS/GCCS Program and security standards.

3.16 *Precedence and Criticality of Requirements*

The precedence and criticality for NIPS 3.0.1 requirements will remain flexible depending upon the needs NIPS 3.0.1 users. Priorities will be established and reviewed at Joint Requirements Working Groups, In-Progress-Reviews, and weekly meetings between the client (U.S. Government) and contractor (PRC Incorporated).

4.

Qualification Provisions

NIPS 3.0.1 will meet the qualification requirements imposed upon it by contractor (PRC Incorporated), client (Government), and independent (Operational Test and Evaluation Force (OPTEVFOR)) testing and evaluation standards.

The use of a controlled environment shall be emphasized in the testing of NIPS 3.0.1 software. Test efforts will be involved with all phases of the system life cycle. The objectives of testing will ensure that the appropriate test plans and test descriptions are prepared; a complete and thorough testing of all software is accomplished; testing methods facilitate user participation; and the system demonstrates that all newly developed and modified software meets established functional and performance requirements.

PRC will test software from the lowest software level, to its inclusion in a segment, to the segment's integration into the specific operating environment. Along the way, test cases will be validated and merged into the Programmer Test Plan. This plan will provide step-by-step instructions on how to test application flow and user interface for the NIPS 3.0.1 components. Once a complete Test Plan has been successfully used on the baselined segments, the segments will be turned over to the Test and Evaluation (T&E) group.

The T&E group will be responsible for testing all NIPS 3.0.1 software components and databases and will conduct full scale system integration testing. During the integration testing, T&E will test the functionality of a segment when operating and interacting with other software segments in the specific operating environment. Operational use will be emphasized more in this phase of the testing.

The T&E group, being independent from the programming staff, will maintain objectivity and ensure that developed software is ready for the Fleet and submission to the JMCIS Software Support Activity for integration testing. After completing these steps, the software system will be ready for operational testing and evaluation (OT&E). This systematic approach to integration, testing, and validation will ensure a controlled transition from design to implementation.

5.

Requirements Traceability

Requirements for NIPS 3.0.1 will be established at Joint Requirements Working Groups, In-Progress-Reviews, and weekly meetings between the client (U.S. Government) and contractor (PRC Incorporated). Additional requirements will be derived from NIPS users through System Change Requests (SCRs).